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ENGLAND GEOSYSTEM
ENVIRONMENTAL ENGINEERS

175

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
SITE DEMOLITION

OGDEN

TECHNICAL MEMORANDUM - NO. 3

DRAFT INTERIM REMEDIATION PLAN (IRP) SOIL EXCAVATION BUILDING 1 AND BUILDING 36

From: Ogden Environmental & Energy Services Co., Inc.

Date: 12/15/2000

Re: Original Draft IRP

BACKGROUND

The draft Interim Remediation Plan (IRP), dated November 13, 2000, (Attachment 1) describes the removal of volatile organic compound (VOC)-impacted soils via excavation in the northeast corner of Building 1 and the southern edge of Building 36 at the Former C-6 Facility (subject property) in Torrance, California. The IRP was proposed to be implemented immediately following the removal of the buildings' concrete basement floor and footings.

Property redevelopment requires that the upper 12 feet of soil must meet risk-based site cleanup criteria, which are currently established through field action levels (FALs).

The level and extent of VOC impacts beneath Building 1 were generally developed using soil analytical data from borings 2BB-5-26 through 2BB-5-43. Based on these soil characterization data, the estimated volume of soil exceeding FALs to a depth of approximately 12 feet below ground surface (bgs) was 5,000 in-place cubic yards or 7,000 loose cubic yards when a 40 percent bulking factor was included.

Once removed, the IRD called for the soils were to be placed in lined aboveground cells with ventilation piping connected to a soil vapor extraction (SVE) system proposed for deep soil remediation (below 12 feet bgs) in Building 1. Once VOC levels were below FALs or risk assessment requirements, the soils were to be tested for compliance and then reused for on-site fill.

UPDATED PLAN

Subsequent to issue of the draft IRP, Boeing Realty Corporation (BRC) notified Ogden that redevelopment will include a regrading of the subject property by importing fill. This regrading will raise the site elevation from 2 to 6 feet above existing grades. Assuming the imported fill meets the project FALs or the December 11, 2000, *Import Soil Specification-Former Boeing C-6 Facility, Parcel C* prepared by Kennedy/Jenks Consultants, the redevelopment requirements (12 feet) will therefore only necessitate the excavation of 6 to 10 feet of impacted soils below the original existing grades prior to fill placement. Further, based on recently obtained site characterization data, the upper soil concentrations are not significantly greater than the established FALs. As a result, the remedial benefit for excavation in this area will be negligible.

The plan for remediation of VOC-impacted soils beneath Buildings 1 and 36 has, therefore, been subsequently revised. Deep VOC-impacted soils in these areas will be addressed by in situ soil vapor extraction (SVE) as outlined in the November 2000 *Interim Remediation Plan (SVE-IRP) for VOC-impacted Soil at Building 1 and Building 36, Former C-6 Facility, Torrance, California,* submitted in draft form to BRC. VOC-impacted soils generated during the removal of foundation elements beneath Buildings 1 and 36 will be managed in accordance with the October 31, 2000, *Site-Wide Soil and Waste Management Plan* and remediated in aboveground cells as outlined in the IRP cited above.

In the event that VOC-impacted soils are encountered during continued site demolition where excavation is a feasible remedial alternative, this IRP will be modified and used to guide removal activities. In accordance with BRC's request, the original draft IRP has been included as Attachment 1 to this technical memorandum.

OGDEN ENVIRONMENTAL AND ENERGY SERVICES

5510 Morehouse Drive
San Diego, CA 92121
858 458 9044
Fax 858 458 0943

November 13, 2000

Mr. Brian Mossman
Boeing Realty Corporation
3760 Kilroy Airport Way
Suite 500
Long Beach, California 90806

Subject: Interim Remediation Plan for Building 1 Basement at the Former C-6 Facility, Torrance, California

Dear Mr. Mossman:

Ogden Environmental and Energy Services Co., Inc. (Ogden) has prepared and is submitting this Interim Remediation Plan (IRP) for impacted shallow soils beneath the Building 1 Basement at the Former C-6 Facility in Torrance, California.

This work is currently on a fast-track basis since the basement of Building 1 is scheduled to be excavated during the week of November 20, 2000. This work is scheduled to take place concurrently or immediately after the basement slab has been removed so that the excavation can be backfilled prior to the wet season.

If you have any questions regarding this or any other issue, do not hesitate to call either of the undersigned at (858) 458-9044.

Sincerely,

Scott P. Zachary
Project Manager

Lawrence Lansdale, P.E.
Senior Project Engineer

SPZ/LL:rgr

cc: File #322781000

Interim Remediation Plan for Building 1 Basement at the Former C-6 Facility, Torrance, California

Prepared for

Boeing Realty Company
3760 Kilroy Airport Way
Suite 500
Long Beach, California 90806

Prepared by

Ogden Environmental and Energy Services Co., Inc.
5510 Morehouse Drive
San Diego, California 92121
(858) 458-9044

November 2000
Project No. 322781000

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1.0 INTRODUCTION

This Interim Remediation Plan (IRP) has been prepared for the removal of volatile organic compound (VOC)-impacted soils in the northeast corner of Building 1 and the southern edge of Building 36 at the Former C-6 Facility (subject property) in Torrance, California. This IRP is proposed to be implemented immediately following the removal of the concrete basement floor and footings, scheduled to begin the week of November 20, 2000. The IRP will be performed in an expedited manner in an effort to remove impacted soil to a depth of 12 feet below ground surface (bgs), the depth required for site redevelopment construction, and to backfill the excavation before the rainy season. Impacted soils deeper than 12 feet bgs will be addressed in a subsequent remedial action plan.

The following sections discuss the site and subject area background, investigation results of the subject area, purpose of the removal, removal approach and methodology, health and safety issues, and reporting.

2.0 SUBJECT AREA BACKGROUND

The subject property is approximately 170 acres, located at 19503 South Normandie Avenue in Torrance, California (Figure 1). The subject property is bordered on the north by West 190th Street; on the east by railroad tracks and South Normandie Avenue; on the south by Montrose Chemical and residential properties; and on the west by Western Avenue, Capitol Metals, and International Light Metals (ILM). The area addressed in this IRP, shown in Figure 2, is the northwest corner of Building 1.

In 1991, near Building 36, four underground bulk storage containers that formerly contained degreaser (15T through 18T) were removed. Following the removal, several phases of site assessment were conducted at the property to primarily evaluate the extent of chlorinated hydrocarbons in the soil and groundwater.

The basement of Building 1 reportedly also housed drums containing solvents, which leaked and seeped into the concrete slab, possibly impacting the underlying soils.

3.0 INVESTIGATION RESULTS - SUBJECT AREA

In 1997, borings 2BB-5-26 through 2BB-5-43 were drilled and sampled in the Building 1 basement. The borings were drilled using push-point drilling methods; the borings were advanced to a general depth of 10 feet below the base of the 22-inch-thick concrete slab. Soil samples were analyzed for VOCs by EPA Methods 8260 or 8010/8020; petroleum hydrocarbons by EPA Methods 418.1 and 8015M; and Title 22 metals by EPA Methods 610, 7196, and 7471 (Figure 3).

Trichloroethene (TCE), 1,1-dichloroethylene (DCE), and tetrachloroethene (PCE) were detected in several soil samples collected from this area. Maximum concentrations of TCE and PCE were detected at 150 micrograms per kilogram (μg/kg) in boring 2BB-5-33 at 10 feet and 160 μg/kg in boring 2BB-5-21 at 4 feet, respectively, as referenced in *Areas 4 and 5 - Phase II Soil Characterization, McDonnell Douglas Realty Company, C-6 Facility, Los Angeles, California*, 22 August 2000, prepared by Kennedy/Jenks. Generally, TCE and PCE concentrations above 100 μg/kg were observed in borings drilled in the east and northeast portions of the basement. In addition to previous soil sample results that are currently being tabulated by Ogden from the Building 36 vicinity, Kennedy/Jenks is currently collecting additional samples in the basement of Building 1 to further define the lateral and vertical extent of the contamination. These additional data will give a more precise estimate of the shallow soils to be excavated.

Previous groundwater investigations at the subject property established that the uppermost groundwater is at 60 to 70 feet bgs in a semiperched aquifer flowing to the south-southeast at a hydraulic gradient of 3.5 feet per mile (late 1996). The uppermost soils at the subject property consist predominantly of clay and silt localized lenses of interbedded sand.

Groundwater beneath the subject area is impacted with VOCs and is currently being addressed under a separate remedial action plan.

4.0 SOIL REMOVAL PURPOSE AND DESIGN BASIS

Parcel C of the subject property is currently under a fast-track redevelopment schedule. In an effort to keep redevelopment progress on schedule, the top 12 feet of soil must meet risk-based site cleanup criteria. To facilitate this need, field action levels (FALs) were derived for each chemical present and are protective of both human health and groundwater impact. The FALs are intended to be used as a tool in the field to conduct adequate step-out investigation as well as excavation. Table 1 provides a listing of the project FALs.

As the Building 1 basement concrete slab is being removed, impacted soils above the FALs to a depth of approximately 12 feet bgs will be removed to facilitate new construction. Section 5.0 presents the soil removal approach.

Based on soil characterization data collected to date, the estimated volume of soil that exceeds FALs to a depth of approximately 12 feet bgs is 5,000 in-place cubic yards or 7,000 loose cubic yards when a 40 percent bulking factor is included. Figures 3 and 4 show the plan view and cross-sectional area of the soils believed to be over FALs. Data regarding soil impacts to the north and east are limited; therefore, the limits of impact in these areas have been estimated.

Once removed, the soils will be placed in lined cells and ventilation piping will be installed for VOC removal using a soil vapor extraction (SVE) system. This SVE system will be installed as part of the deep soil interim remedy for Building 1 being prepared under separate cover. It is anticipated that once VOC levels are below FALs or risk assessment requirements, the soils will be tested for compliance and then reused for on-site fill.

5.0 REMOVAL APPROACH AND METHODOLOGY

5.1 PERMITTING-SCAQMD RULE 1166

Because of potential emissions of VOCs into the atmosphere during excavation activities, the South Coast Air Quality Management District (SCQAMD) will require notification of excavation activities (via fax) per Rule 1166. The notification should include at a minimum the volume of soil anticipated to be generated, vapor suppression measures that will be implemented, and vapor monitoring protocol. Once field activities begin, strict adherence to the Rule 1166 protocol included in the notification must be maintained. Refer to the October 2000 Ogden report entitled *Site-Wide Soil and Waste Management Plan* for a thorough analysis of Rule 1166 notifications and procedures.

5.2 Well Abandonment

Because former pilot test wells RW-1, P-1, and P-2 are within the area of proposed excavation, they will have to be abandoned prior to work commencement. A permit to abandon the wells should be obtained from the County of Los Angeles Department of Public Health. Abandonment procedures should follow DWR Bulletin 91-10 protocol using the overdrilling method. This would entail drilling the annular materials and well casings out and grouting the borings to total depth with bentonite grout. Wastes from drilling will be handled and disposed of in accordance with the *Site-Wide Soil and Waste Management Plan* developed by Ogden.

5.3 Treatment Cell Construction

Because shallow soils (assumed to be soil from surface grade to a depth of approximately 12 feet bgs) may contain elevated chlorinated hydrocarbon concentrations and will be readily accessible following basement demolition, Ogden recommends excavating soil beneath the basement slab to a depth of 12 feet bgs and constructing stockpiles, which will be treated using aboveground SVE. As the soil is removed, it will be placed in approximate 2-foot lifts or layers in the staging area shown on Figure 3. To prepare for future SVE treatment, slotted PVC piping (4-inch-diameter, 0.020-inch slot) will be installed between each soil lift. The slotted pipes will be manifolded to an SVE treatment compound. The advantage to this approach is threefold: (1) aboveground treatment of the unconsolidated or semiconsolidated soil will promote expedited source reduction to below FALs, (2) since the deeper soils beneath the basement slab (i.e., soil from approximately 12 to 60 feet bgs) will likely be treated via *in situ* SVE, it would be simple and cost-effective to incorporate the stockpile into the SVE system, and (3) after installation of a vapor barrier at the bottom of the excavation, the treated soil can be used as backfill, thereby reducing costs associated with imported fill.

The treatment cells will be constructed on a bermed layer of 10-mil visqueen to prevent contamination from infiltrating nonimpacted soil beneath the pile and to keep the soil dry during periods of heavy rain. Once the pile is constructed, the entire length will be covered with 10-mil visqueen, which will be weighted with sandbags or other anchoring devices. The surface cover will keep the soil dry during precipitation events, minimize fugitive emissions from volatile compounds, and reduce vacuum loss to the atmosphere during future treatment.

5.3.1 Cell Size and Location

Based on the 7,000-cubic-yard volume estimate described above, the treatment cells will consist of two piles, each expected to be approximately 350 feet long, 50 feet wide, and 6 feet high. Since it is planned to incorporate the cells into the deeper soils remediation at the subject property, the cells should be located in close vicinity to the treatment compound and headers for the *in situ* remediation. Figure 3 shows the probable location of the treatment cells.

Should the cell sizes exceed the estimate by 30 percent or more, it may be advisable to construct additional cells adjacent and parallel to the proposed cells. Ventilation piping would be once again incorporated into the deeper soils SVE system.

5.3.2 Soil-type Considerations

Some of the boring logs reviewed in the work area indicated significant proportions of clay and silt. As such, the air permeability/venting properties of a portion of the excavated soil may be limited. This may be addressed by processing the soil through the use of an industrial shredder and/or amending the soil with a conditioner to expand the soil and minimize clumping. Soil properties will have to be evaluated at the time of excavation to determine if additional processing is needed.

5.4 Soil Excavation

Based on the approximate area of excavation shown in Figures 3 and 4, it is estimated that 7,000 loose cubic yards of soil will be excavated from beneath the basement slab. Excavation will likely be carried out using a track excavator or backhoe.

5.4.1 PID Screening and Soil Segregation

During soil removal, soil will be periodically screened from the excavator bucket using a portable photoionization detector (PID) calibrated to 100 parts per million by volume (ppmv) hexane. Using PID readings obtained from the August 22, 2000, Kennedy/Jenks report, and comparing these results to the FALs for TCE (Table 1), an action level of 50 ppmv was estimated.

Using the 50 ppmv action level, excavated soil will be segregated into "nonimpacted" and "impacted" stockpiles. Soil considered to be nonimpacted will be stockpiled and sampled in accordance with Rule 1166 and the protocol in the *Site-Wide Soil and Waste Management Plan* developed by Ogden. Generally, four discrete soil samples should be collected for the first 100 cubic yards of soil, and then one additional sample should be collected for each additional 100 cubic yards for total soil volumes between 100 and 1,000 cubic yards. Samples will be analyzed for VOCs by EPA Methods 8260 or 8010/8020; petroleum hydrocarbons by EPA Methods 418.1 and 8015M; and Title 22 metals by EPA Methods 610, 7196, and 7471. It is assumed that nonimpacted soil will be appropriate for reuse at the facility.

All stockpiled soil will be covered at the end of each working day to minimize VOC emissions and protect the soil from rain.

Soil segregated as "impacted" will be used to construct the treatment cells described above. Cell soil sampling and characterization should be performed after SVE treatment is completed and VOC levels have been reduced. Soil undergoing treatment should be suitable for site reuse. A more detailed discussion of soil treatment will be included in the forthcoming deeper soils remedial action plan.

5.4.2 Excavation Completion Protocol and Confirmation Sampling

Once the approximate excavation limits shown in Figure 3 are attained, PID readings will be closely evaluated to determine if the lateral limits of hydrocarbon-impacted soil have been defined and excavated. Using the action level criteria, soil excavation should be considered complete once three PID readings are obtained in each compass direction that are below the 50 ppmv limit. The three readings will be taken at varying distances from the source area as excavation proceeds in each direction. PID readings will be confirmed with confirmation soil samples, which will be collected at approximate 20-foot centers along each sidewall. For each sidewall sample, an additional sample will be collected at the base of the sidewall directly below. Sidewall samples should be field screened with the PID to verify the completeness of soil removal.

After soil removal is deemed complete, the bottom of the excavation will be sampled by collecting approximately 1 sample per 1,500 square feet of area (approximately

20 samples for the area depicted in Figure 4). Samples should be analyzed for VOCs by EPA Methods 8260 or 8010/8020; petroleum hydrocarbons by EPA Methods 418.1 and 8015M; and Title 22 metals by EPA Methods 610, 7196, and 7471. VOC data will be used to evaluate areas where SVE should be concentrated during deeper soil remediation.

5.4.3 Rain and Run-off

Stockpiled soil will need to be covered with visqueen at the end of each workday to minimize VOC emissions and help prevent rain infiltration. If heavy rains are anticipated, the stockpiles may need to be bermed along the fringes with sandbags to divert surface storm water drainage away from the piles. Care should also be taken to prevent storm water infiltration into the open excavation. It may be necessary to construct water diversions around the excavation if backfilling cannot proceed before a heavy precipitation event. Sand bags or other mitigation measures should be considered.

5.5 EXCAVATION BACKFILLING

It is understood that excavation will be backfilled with imported soil already available at the site. To minimize settlement, soil should be moisturized and compacted to 90 percent in accordance with American Society for Testing and Materials (ASTM) standard, ASTM 1557. Soil that is tested below the FALs should also be usable as backfill and general site reuse (grading, etc.) in instances where imported soil volume is inadequate.

6.0 HEALTH AND SAFETY ISSUES

The worker Health and Safety Plan (HASP) for environmental work in Parcel C shall be prepared by the construction contractor to implement and maintain site safety protocol. Based on the scope of work presented within this work plan, the health and safety issues discussed below need to be addressed at the subject property and included (if not already) in their plan.

6.1 UNDERGROUND UTILITIES

Underground Service Alert (US Alert) needs to be notified 48 hours prior to initiation of field work. It is also recommended that available utility maps be obtained and reviewed prior to performing work. As an additional precautionary measure, a private firm should be used to locate any utilities not identified on maps obtained.

6.2 Personal Protective Equipment (PPE)

All site personnel should be equipped, at a minimum, with Level D safety gear (e.g., hard hat, steel-toed boots, traffic vest). Because dust may be a problem and chlorinated hydrocarbons and moderate concentrations of metals are known to exist in site soils, field personnel should also consider donning half- or full-faced respirators equipped with hepa-type filters and cartridges for reducing dust and chlorinated VOC concentrations in air (Level C). Workers should also monitor ambient dust levels using OSHA-approved dust monitoring equipment. The current Occupational Safety and Health Administration (OSHA) time-weighted averages (TWAs) for dust and the main chlorinated compounds of interest should be researched and the guidelines adhered to during all field activities.

6.3 Dust and VOC Control

During demolition and excavation beneath the basement floor, dust control will be maintained in the work area. Applying a water mist during demolition and excavation as well as construction of the treatment cell may mitigate dust. Depending on VOCs emitted from impacted soils during these operations, a surfactant such as Biosolv™ or another industry-recognized vapor-abating product may need to be mixed with water and applied to soils being moved.

Site perimeter air monitoring should be performed with a PID and dust monitor to ensure that chlorinated hydrocarbon levels and dust do not present a threat to public health. These levels should be defined in the HASP prepared by Kennedy/Jenks.

6.4 Shoring/Sloping

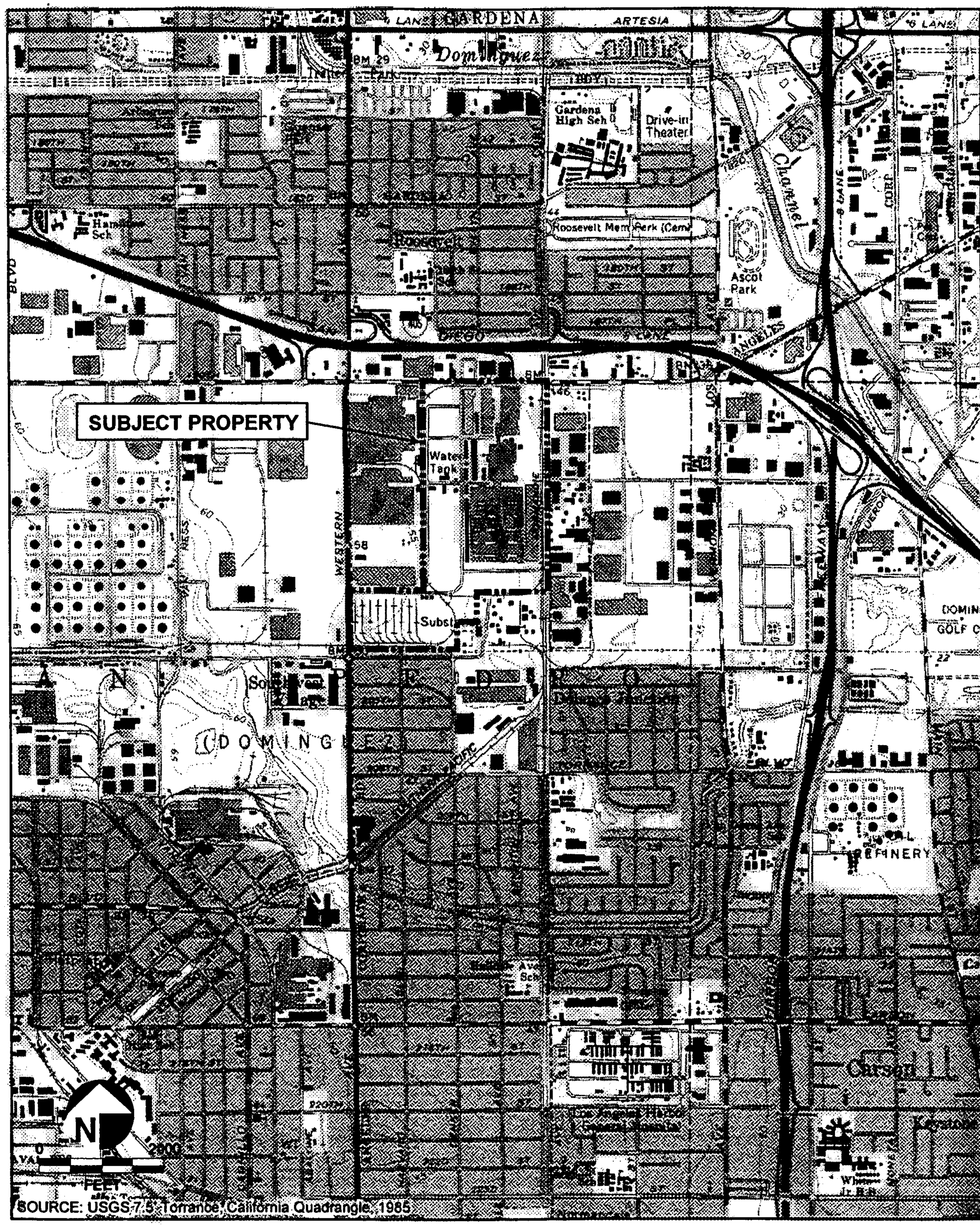
If necessary, shoring should be installed or the walls of the excavation should be designed in accordance with current OSHA guidelines. Any samples within the sidewalls or floor of the excavation can be retrieved with a hand auger or the track excavator bucket.

6.5 EQUIPMENT DECONTAMINATION

All heavy machinery used to excavate and move the soil should be decontaminated in accordance with applicable laws and regulations (e.g., Resource Conservation and Recovery Act [RCRA] or other). Areas should be set aside to perform decontamination procedures. Rinsate from decontamination procedures should be contained, characterized and disposed properly.

7.0 REPORTING

Following excavation work and cell construction, a report describing cell construction, volumes of soil generated, excavation extent, and other pertinent field activities will be prepared. The report will also include a discussion of data from stockpile characterization and excavation confirmatory sampling. The report will be prepared ultimately for the RWQCB closure of soils in this area.



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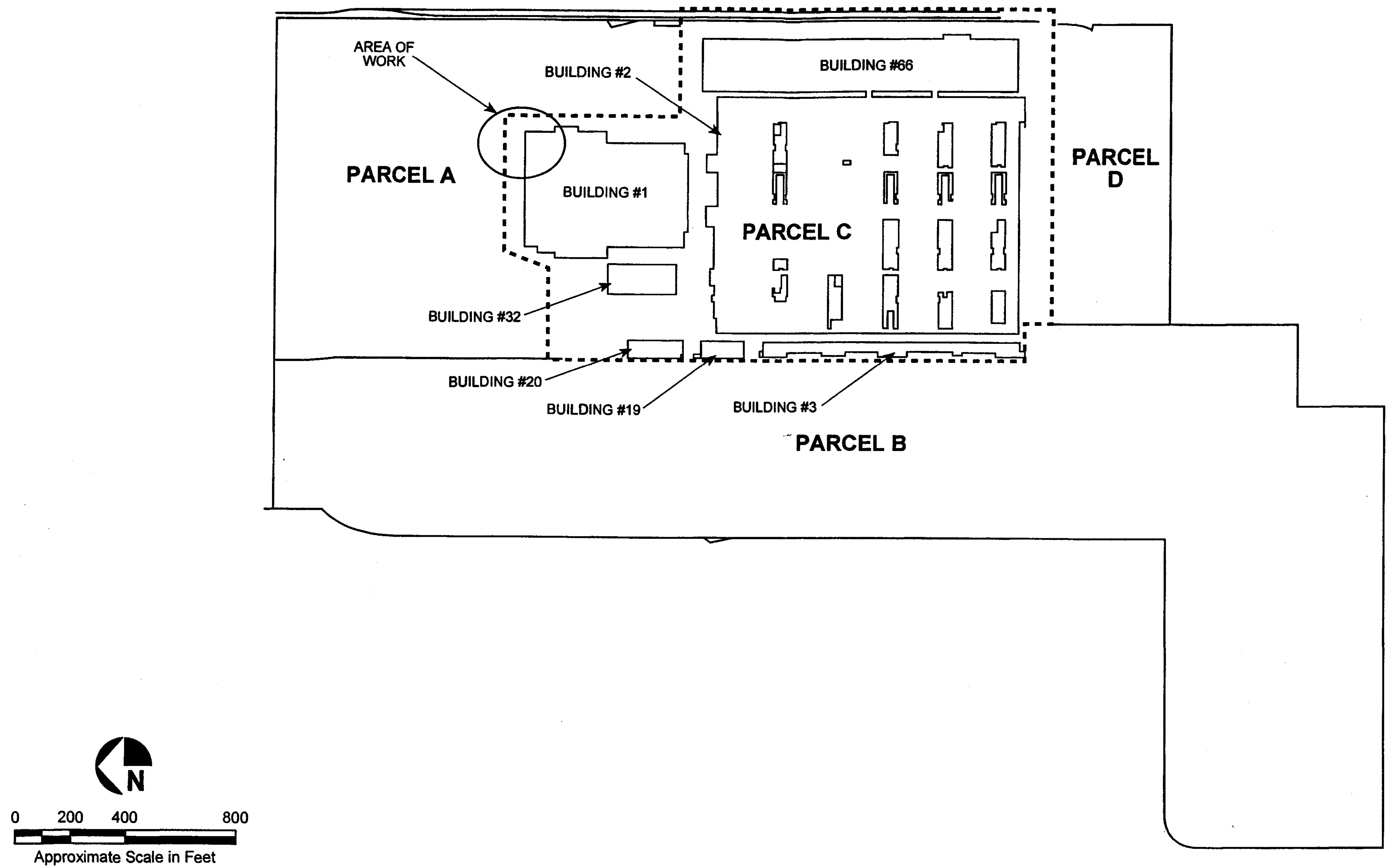
Subject Property Location
Boeing Realty Corporation, Former C-6 Facility
Los Angeles, California

FIGURE **1**

Graphics/HazMat/Boeing C-6/Solid Waste Mgmt Plan/Project Location.FH8



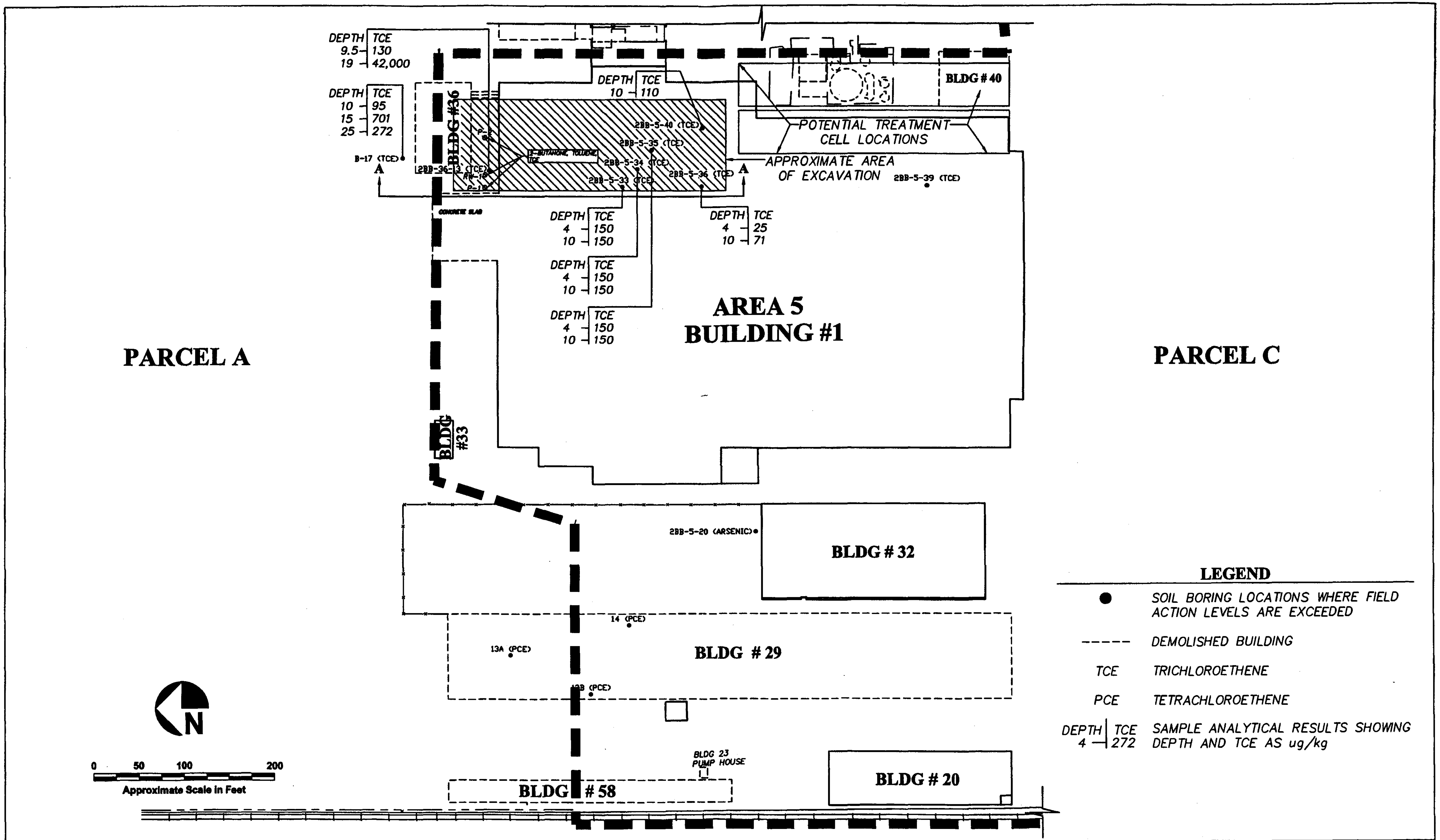
SOURCE: Kennedy/Jenks Consultants, Sampling and Analysis Plan,
Boeing Realty Corporation's C-6 Facility-Parcel C, Los Angeles California, 16 August 2000

OGDEN

Site Plan
Former Boeing C-6 Facility Redevelopment Project
Los Angeles, California

FIGURE **2**

GRAPHICS/Hazmat/Boeing C-6/Solid Waste Mgmt Plan/Site Plan Fig 2.Fh8



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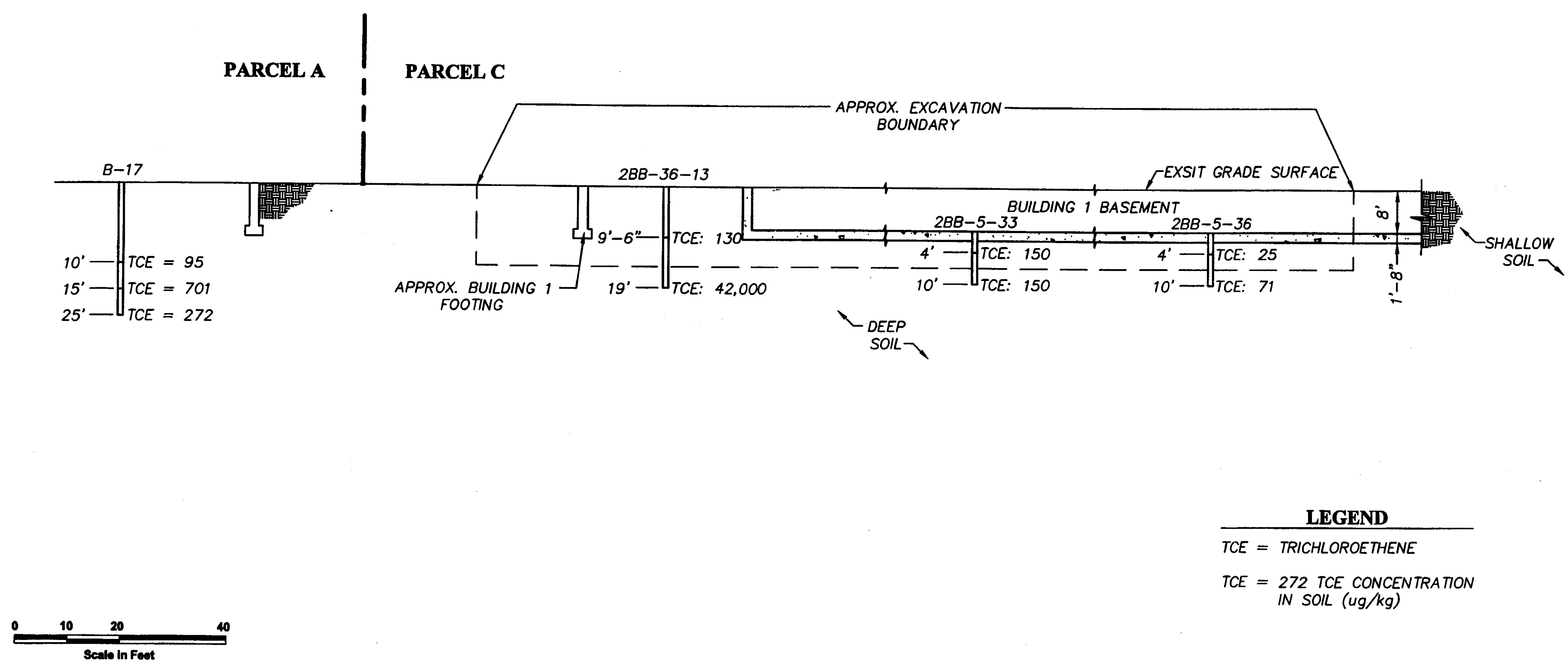
Boeing Realty Corporation Former C-6 Facility Parcel C
Approximate Excavation And Stockpile Locations

FIGURE 3

GRAPHICS/Hazmat/Boeing C-6/Figure 3.dwg

BOE-C6-0048240



OGDEN

Boeing Realty Corporation Former C-6 Facility Parcel C
Cross - Section A-A'

FIGURE **4**

GRAPHICS/Hazmat/Boeing C-6/Figure 2.dwg

BOE-C6-0048241

TABLES

Table 1
Soil Field Action Levels for the Former C-6 Facility

Chemical	CAS No.	Industrial Soil FAL (mg/kg)	Basis
ALUMINUM	7429-90-5	3.9E+01	SSL
ANTIMONY	7440-36-0	1.4E+01	SSL
ARSENIC	7440-38-2	1.5E+01	Background
BARIUM	7440-39-3	6.3E+02	SSL
BERYLLIUM	7440-41-7	3.1E+02	SSL
CADMIUM	7440-43-9	2.7E+01	SSL
CHROMIUM	7440-47-3	3.8E+01	SSL
COBALT	7440-48-4	2.3E+01	Background
COPPER	7440-50-8	5.4E+01	Background
LEAD	7439-92-1	1.9E+02	Background
MERCURY	7487-94-7	1.1E+01	SSL
MOLYBDENUM	7439-98-7	4.0E+00	RDL
NICKEL	7440-02-0	9.5E+02	SSL
SELENIUM	7782-49-2	1.0E+01	SSL
SILVER	7440-22-4	3.1E+01	SSL
THALLIUM	7440-28-0	3.5E+01	Background
VANADIUM	7440-62-2	4.8E+03	Noncancer PRG
ZINC	7440-66-6	4.2E+03	SSL
HEXAVALENT CHROMIUM	18540-29-9	3.8E+01	SSL
AROCLOR-1016	12674-11-2	3.4E+00	SSL
AROCLOR-1221	11104-28-2	3.7E-02	SSL
AROCLOR-1232	11141-16-5	3.3E-02	RDL
AROCLOR-1242	53469-21-9	1.1E-01	SSL
AROCLOR-1248	12672-29-6	1.7E+00	SSL
AROCLOR-1254	11097-69-1	6.7E-01	SSL
AROCLOR-1260	11096-82-5	9.8E-01	SSL
ACENAPHTHENE	83-32-9	2.3E+02	SSL
ACENAPHTHYLENE	208-96-8	1.5E+03	SSL
ANTHRACENE	120-12-7	5.3E+03	SSL
BENZO(A)ANTHRACENE	56-55-3	2.4E+00	SSL
BENZO(A)PYRENE	50-32-8	4.7E-01	Cancer PRG
BENZO(B)FLUORANTHENE	205-99-2	4.7E+00	Cancer PRG
BENZO(G,H,I)PERYLENE	191-24-2	2.0E+01	SSL
BENZO(K)FLUORANTHENE	207-08-9	4.7E+02	Cancer PRG
CHRYSENE	218-01-9	2.4E+03	SSL
DIBENZ(A,H)ANTHRACENE	53-70-3	1.6E-01	Cancer PRG
FLUORANTHENE	206-44-0	6.3E+03	SSL
FLUORENE	86-73-7	2.4E+02	SSL
INDENO(1,2,3-CD)PYRENE	193-39-5	4.7E+00	Cancer PRG
NAPHTHALENE	91-20-3	2.0E+01	SSL
PHENANTHRENE	85-01-8	1.5E+03	SSL
PYRENE	129-00-0	1.5E+03	SSL
1,2,4-TRICHLOROBENZENE	120-82-1	1.4E+01	SSL
1,2-DICHLOROBENZENE	95-50-1	3.5E+01	SSL
1,3-DICHLOROBENZENE	541-73-1	3.5E-01	SSL
1,4-DICHLOROBENZENE	106-46-7	3.3E-01	RDL
2,4,5-TRICHLOROPHENOL	95-95-4	3.0E+02	SSL
2,4,6-TRICHLOROPHENOL	88-06-2	3.3E-01	RDL
2,4-DICHLOROPHENOL	120-83-2	1.3E+00	SSL
2,4-DIMETHYLPHENOL	105-67-9	1.0E+01	SSL
2,4-DINITROPHENOL	51-28-5	1.6E+00	RDL
2,4-DINITROTOLUENE	121-14-2	7.2E-01	SSL
2,6-DINITROTOLUENE	606-20-2	3.3E-01	RDL
2-CHLORONAPHTHALENE	91-58-7	1.0E+02	SSL
2-CHLOROPHENOL	95-57-8	2.0E+00	SSL
2-METHYLNAPHTHALENE	91-57-6	2.0E+01	SSL
2-METHYLPHENOL	95-48-7	2.0E+01	SSL
2-NITROANILINE	88-74-4	1.6E+00	RDL
2-NITROPHENOL	88-75-5	2.2E+00	SSL
3,3'-DICHLOROBENZIDINE	91-94-1	1.6E+00	RDL
3-NITROANILINE	99-09-2	1.6E+00	RDL
4,6-DINITRO-2-METHYLPHENOL	534-52-1	1.6E+00	RDL
4-BROMOPHENYLPHENYL ETHER	101-55-3	3.3E-01	RDL
4-CHLORO-3-METHYLPHENOL	59-50-7	2.0E+00	SSL
4-CHLOROANILINE	106-47-8	1.3E+00	SSL
4-CHLOROPHENYL-PHENYL ETHER	7005-72-3	3.3E-01	RDL
4-METHYLPHENOL	106-44-5	1.7E+00	SSL
4-NITROANILINE	100-01-6	1.6E+00	RDL
4-NITROPHENOL	100-02-7	2.2E+00	SSL
ANILINE	62-53-3	6.6E-01	RDL
BENZIDINE	92-87-5	6.6E-01	RDL
BENZOIC ACID	65-85-0	8.8E+02	SSL

Table 1
Soil Field Action Levels for the Former C-6 Facility

Chemical	CAS No.	Industrial Soil FAL (mg/kg)	Basis
BENZYL ALCOHOL	100-51-6	8.5E+01	SSL
BIS(2-CHLOROETHOXY)METHANE	111-91-1	3.3E-01	RDL
BIS(2-CHLOROETHYL)ETHER	111-44-4	3.3E-01	RDL
BIS(2-CHLOROISOPROPYL)ETHER	108-60-1	3.3E-01	RDL
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	3.8E+01	Cancer PRG
BUTYLBENZYLPHTHALATE	85-68-7	9.0E+02	SSL
DIBENZOFURAN	132-64-9	2.3E+01	SSL
DIETHYLPHTHALATE	84-66-2	8.6E+04	SSL
DIMETHYPHTHALATE	131-4-3	3.3E-01	RDL
DI-N-BUTYLPHTHALATE	84-74-2	2.0E+03	SSL
DI-N-OCTYLPHTHALATE	117-84-0	5.9E+03	Noncancer PRG
HEXACHLOROBENZENE	118-74-1	3.3E-01	RDL
HEXACHLOROBUTADIENE	87-68-3	2.0E+00	SSL
HEXACHLOROCYCLOPENTADIENE	77-47-4	4.0E+02	SSL
HEXACHLOROETHANE	67-72-1	1.0E+00	SSL
ISOPHORONE	78-59-1	5.0E-01	SSL
NITROBENZENE	98-95-3	3.3E-01	RDL
N-NITROSODIMETHYLAMINE	62-75-9	3.3E-01	RDL
N-NITROSO-DI-N-PROPYLAMINE	621-64-7	3.3E-01	RDL
N-NITROSODIPHENYLAMINE	86-30-6	1.0E+00	SSL
PENTACHLOROPHENOL	87-86-5	1.6E+00	RDL
PHENOL	108-95-2	1.6E+02	SSL
1,1,1,2-TETRACHLOROETHANE	630-20-6	5.0E-03	RDL
1,1,1-TRICHLOROETHANE	71-55-6	1.8E+02	SSL
1,1,2,2-TETRACHLOROETHANE	79-34-5	5.0E-03	RDL
1,1,2-TRICHLOROETHANE	79-00-5	1.4E-02	SSL
1,1-DICHLOROETHANE	75-34-3	1.5E+01	SSL
1,1-DICHLOROETHENE	**75-35-4**	**5.0E-03**	**RDL**
1,1-DICHLOROPROPENE	563-58-6	5.0E-03	RDL
1,2,3-TRICHLOROBENZENE	87-61-6	1.4E+01	SSL
1,2,3-TRICHLOROPROPANE	96-18-4	5.0E-03	RDL
1,2,4-TRICHLOROBENZENE	120-82-1	1.4E+01	SSL
1,2,4-TRIMETHYLBENZENE	95-63-6	5.7E+01	Noncancer PRG
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.0E-02	RDL
1,2-DIBROMOETHANE	106-93-4	5.0E-03	RDL
1,2-DICHLOROBENZENE	95-50-1	3.5E+01	SSL
1,2-DICHLOROETHANE	107-06-2	5.0E-03	RDL
1,2-DICHLOROPROPANE	78-87-5	5.0E-03	RDL
1,3,5-TRIMETHYLBENZENE	108-67-8	2.3E+01	Noncancer PRG
1,3-DICHLOROBENZENE	541-73-1	3.5E-01	SSL
1,4-DICHLOROBENZENE	106-46-7	1.2E-02	SSL
1,4-DIOXANE	123-91-1	2.5E-01	RDL
2,2-DICHLOROPROPANE	594-20-7	5.0E-03	RDL
2-BUTANONE(MEK)	78-93-3	6.8E+01	SSL
2-CHLOROETHYLVINYL ETHER	110-75-8	1.0E-02	RDL
2-CHLOROTOLUENE	95-49-8	4.6E+00	SSL
2-HEXANONE	591-78-6	1.6E+01	SSL
2,2-DICHLOROPROPANE	594-20-7	5.0E-03	RDL
4-CHLOROTOLUENE	106-43-4	4.6E+00	SSL
4-METHYL-2-PENTANONE (MIBK)	108-10-1	1.6E+01	SSL
ACETONE	67-64-1	1.1E+01	SSL
ACETONITRILE	75-05-8	7.4E-01	SSL
ACROLEIN	107-02-8	1.1E-01	Noncancer PRG
ACRYLONITRILE	107-13-1	1.0E-01	RDL
BENZENE	71-43-2	1.3E-02	SSL
BROMOBENZENE	108-86-1	5.5E+00	SSL
BROMOCHLOROMETHANE	74-97-5	5.0E-03	RDL
BROMODICHLOROMETHANE	75-27-4	5.0E-03	RDL
BROMOFORM	75-25-2	8.0E-01	SSL
BROMOMETHANE	74-83-9	1.8E-01	SSL
CARBON DISULFIDE	75-15-0	6.1E+00	Noncancer PRG
CARBON TETRACHLORIDE	56-23-5	5.0E-03	RDL
CHLOROBENZENE	108-90-7	5.5E+00	SSL
CHLOROETHANE	75-00-3	3.5E-02	SSL
CHLOROFORM	67-66-3	5.0E-03	RDL
CHLOROMETHANE	74-87-3	1.4E-02	SSL
CIS-1,2-DICHLOROETHENE	156-59-2	1.2E-01	SSL
CIS-1,3-DICHLOROPROPENE	10061-01-5	5.0E-03	RDL
DIBROMOCHLOROMETHANE	124-48-1	5.0E-03	RDL
DICHLORODIFLUOROMETHANE (Freon 12)	75-71-8	4.2E+01	SSL
ETHYLBENZENE	100-41-4	2.7E+01	SSL
HEXACHLOROBUTADIENE	87-68-3	5.7E-03	SSL

Table 1
Soil Field Action Levels for the Former C-6 Facility

Chemical	CAS No.	Industrial Soil FAL (mg/kg)	Basis
IODOMETHANE	74-88-4	1.0E-02	RDL
ISOPROPYLBENZENE	98-82-8	1.7E+02	Noncancer PRG
ISOPROPYL ETHER (DIPE)	108-20-3	4.1E+01	SSL
METHYLENE CHLORIDE	75-09-2	5.7E-02	SSL
METHYL-T-BUTYL ETHER (MTBE)	1634-04-4	4.1E+01	SSL
N-BUTYLBENZENE	104-51-8	2.2E+01	SSL
N-PROPYLBENZENE	103-65-1	2.2E+01	SSL
P-ISOPROPYL TOLUENE	99-87-6	5.3E+02	SSL
SEC-BUTYLBENZENE	135-9-88	1.7E+01	SSL
STYRENE	100-42-5	1.6E+02	SSL
T-BUTANOL	75-65-0	4.6E+01	SSL
T-BUTYLBENZENE	98-06-6	1.7E+01	SSL
TERT-AMYL METHYL ETHER (TAME)	994-05-8	4.1E+01	SSL
TERT-BUTYL ETHYL ETHER (ETBE)	637-92-3	4.1E+01	SSL
TETRACHLOROETHENE (PCE)	**127-18-4**	**2.3E-02**	**SSL**
TETRAHYDROFURAN	109-99-9	3.2E+02	Cancer PRG
TOLUENE	108-88-3	3.8E+01	SSL
TRANS-1,2-DICHLOROETHENE	156-60-5	3.0E+00	SSL
TRANS-1,3-DICHLOROPROPENE	10061-02-6	5.0E-03	RDL
TRICHLOROETHENE (TCE)	**79-01-6**	**2.7E-02**	**SSL**
TRICHLOROFLUOROMETHANE	75-69-4	6.8E+01	SSL
VINYL ACETATE	108-05-4	1.1E+02	SSL
VINYL CHLORIDE	75-01-4	1.0E-02	RDL
XYLENES (TOTAL)	1330-20-7	5.3E+02	SSL
PERCHLORATE	14797-73-0	5.0E-02	RDL